

## Math 110 Homework 1

Due Tuesday June 26, 2018

Covers Material from Axler sections 1.A, 1.B, 1.C, 2.A, 2.B

1. Axler 1.C Exercise 12
2. Axler 2.A Exercise 1
3. Axler 2.A Exercise 6
4. Axler 2.B Exercise 6
5. You can add complex numbers and also multiply them by elements of  $\mathbb{R}$ . Does this make  $\mathbb{C}$  into a vector space over  $\mathbb{R}$ ? Why or why not?
6. Prove that  $\sin$  and  $\cos$  are linearly independent in the real vector space of functions  $\mathbb{R} \rightarrow \mathbb{R}$ .